

WHAT IS CLAIMED IS:

1. A communication system in which communication is performed between a stationary terminal and a mobile terminal under an OFDM system, the communication system comprising:

a transmitter in the mobile terminal for transmitting a control signal and a data signal; and

a receiver in the stationary terminal for receiving the control signal and the data signal transmitted from the mobile terminal, wherein:

the control signal includes a signal indicating a number of sub-carriers used in transmitting the data signal; and

the number of sub-carriers is determined according to a moving speed of the mobile terminal so that the number of the sub-carriers is reduced in accordance with increase of the moving speed.

2. The communication system as in claim 1, wherein:

a transmission rate of the data signal is reduced in accordance with increase of the moving speed.

3. The communication system as in claim 1, wherein:

a transmission rate of the data signal is kept constant irrespective of the moving speed.

4. A communication system in which communication is performed between a stationary terminal and a mobile terminal under an OFDM system, the communication system comprising:

a transmitter in the mobile terminal for transmitting a control signal and a data signal; and

a receiver in the stationary terminal for receiving the control signal and the data signal transmitted from the mobile terminal, wherein:

the control signal includes a signal indicating a sub-carrier modulation formula used in transmitting the data signal; and

the sub-carrier modulation formula is determined according to a moving speed of the mobile terminal so that the sub-carrier modulation formula having a higher error-robustness is used in accordance with increase of the moving speed.

5. The communication system as in claim 4, wherein:

a transmission rate of the data signal is reduced in accordance with increase of the moving speed.

6. A communication system in which communication is performed between a stationary terminal and a mobile

terminal under an OFDM system, the communication system comprising:

a transmitter in the mobile terminal for transmitting a control signal and a data signal; and

a receiver in the stationary terminal for receiving the control signal and the data signal transmitted from the mobile terminal, wherein:

the control signal includes a signal representing a error-correction-code coding rate used in transmitting the data signal; and

the error-correction-code coding rate is determined according to a moving speed of the mobile terminal so that the error-correction-code coding rate having a higher error-correction ability is used in accordance with increase of the moving speed.

7. The communication system as in claim 6, wherein:

a transmission rate of the data signal is reduced in accordance with increase of the moving speed.

8. The mobile terminal for use in the communication system defined in claim 1, the mobile terminal comprising:

a transmitter-receiver for communicating with the stationary terminal;

a speed sensor for detecting the moving speed of the mobile terminal; and

a controller for determining the number of sub-carriers according to the detected moving speed, for instructing the transmitter-receiver to notify the number of sub-carriers to the stationary terminal, and for controlling the transmitter-receiver based on the number of sub-carriers.

9. The mobile terminal for use in the communication system defined in claim 2, the mobile terminal comprising:

a transmitter-receiver for communicating with the stationary terminal;

a speed sensor for detecting the moving speed of the mobile terminal; and

a controller for determining the number of sub-carriers and the transmission rate according to the detected moving speed, for instructing the transmitter-receiver to notify the number of sub-carriers and the transmission rate to the stationary terminal, and for controlling the transmitter-receiver based on the number of sub-carriers and the transmission rate.

10. The mobile terminal for use in the communication system defined in claim 3, the mobile terminal comprising:

a transmitter-receiver for communicating with the stationary terminal;

a speed sensor for detecting the moving speed of the mobile terminal; and

a controller for determining the number of sub-carriers according to the detected moving speed while maintaining the transmission rate constant, for instructing the transmitter-receiver to notify the number of sub-carriers and the transmission rate to the stationary terminal, and for controlling the transmitter-receiver based on the number of sub-carriers and the transmission rate.

11. The mobile terminal for use in the communication system defined in claim 4, the mobile terminal comprising:

a transmitter-receiver for communicating with the stationary terminal;

a speed sensor for detecting the moving speed of the mobile terminal; and

a controller for determining the modulation formula according to the detected moving speed, for instructing the transmitter-receiver to notify the modulation formula to the stationary terminal, and for controlling the transmitter-receiver based on the modulation formula.

12. The mobile terminal for use in the communication system defined in claim 5, the mobile terminal comprising:

a transmitter-receiver for communicating with the stationary terminal;

a speed sensor for detecting the moving speed of the mobile terminal; and

a controller for determining the modulation formula and the transmission rate according to the detected moving speed, for instructing the transmitter-receiver to notify the modulation formula and the transmission rate to the stationary terminal, and for controlling the transmitter-receiver based on the modulation formula and the transmission rate.

13. The mobile terminal for use in the communication system defined in claim 6, the mobile terminal comprising:

a transmitter-receiver for communicating with the stationary terminal;

a speed sensor for detecting the moving speed of the mobile terminal; and

a controller for determining the error-correction-code coding rate according to the detected moving speed, for instructing the transmitter-receiver to notify the error-correction-code coding rate to the stationary

terminal, and for controlling the transmitter-receiver based on the error-correction-code coding rate.

14. The mobile terminal for use in the communication system defined in claim 7, the mobile terminal comprising:

a transmitter-receiver for communicating with the stationary terminal;

a speed sensor for detecting the moving speed of the mobile terminal; and

a controller for determining the error-correction-code coding rate and the transmission rate according to the detected moving speed, for instructing the transmitter-receiver to notify the error-correction-code coding rate and the transmission rate to the stationary terminal, and for controlling the transmitter-receiver based on the error-correction-code coding rate and the transmission rate.

15. The mobile terminal as in any one of claims 8-14, wherein:

the mobile terminal further includes a wireless communication device for making notification to the stationary terminal in place of the transmitter-receiver according to the instruction from the controller.

16. The stationary terminal for use in communication with the mobile terminal defined in claim 8, the stationary terminal comprising:

transmitter-receiver means for performing communication with the mobile terminal; and

means for controlling the transmitter-receiver means based on the number of sub-carriers notified from the mobile terminal.

17. The stationary terminal for use in communication with the mobile terminal defined in claim 9, the stationary terminal comprising:

transmitter-receiver means for performing communication with the mobile terminal; and

means for controlling the transmitter-receiver means based on the number of sub-carriers and the transmission rate notified from the mobile terminal.

18. The stationary terminal for use in communication with the mobile terminal defined in claim 10, the stationary terminal comprising:

transmitter-receiver means for performing communication with the mobile terminal; and

means for controlling the transmitter-receiver means based on the number of sub-carriers notified from the mobile terminal.



19. The stationary terminal for use in communication with the mobile terminal defined in claim 11, the stationary terminal comprising:

transmitter-receiver means for performing communication with the mobile terminal; and

means for controlling the transmitter-receiver means based on the modulation formula notified from the mobile terminal.

20. The stationary terminal for use in communication with the mobile terminal defined in claim 12, the stationary terminal comprising:

transmitter-receiver means for performing communication with the mobile terminal; and

means for controlling the transmitter-receiver means based on the modulation formula and the transmission rate notified from the mobile terminal.

21. The stationary terminal for use in communication with the mobile terminal defined in claim 13, the stationary terminal comprising:

transmitter-receiver means for performing communication with the mobile terminal; and

means for controlling the transmitter-receiver means based on the error-correction-code coding rate notified from the mobile terminal.

22. The stationary terminal for use in communication with the mobile terminal defined in claim 14, the stationary terminal comprising:

transmitter-receiver means for performing communication with the mobile terminal; and

means for controlling the transmitter-receiver means based on the error-correction-code coding rate and the transmission rate notified from the mobile terminal.

23. The mobile terminal for use in the communication system defined in claim 1, the mobile terminal comprising:

a transmitter-receiver for communicating with the stationary terminal;

a speed sensor for detecting the moving speed of the mobile terminal; and

a controller for determining the number of sub-carriers according to the detected moving speed, and for controlling the transmitter-receiver based on the number of sub-carriers.

24. The stationary terminal for use in communication with the mobile terminal defined in claim 23, the stationary terminal comprising:

transmitter-receiver means for performing communication with the mobile terminal;

means for determining the number of sub-carriers based on the data signal received from the mobile terminal; and

means for controlling the transmitter-receiver means based on the number of sub-carriers determined by the determining means.

25. A communication system in which communication is performed between a stationary terminal and a mobile terminal under an OFDM system, the communication system is characterized in that the communication is performed based on a communication method which varies according to a moving speed of the mobile terminal.

26. The mobile terminal for use in the communication system defined in claim 25, the mobile terminal comprising:

a transmitter-receiver for communicating with the stationary terminal;

a speed sensor for detecting the moving speed of the mobile terminal; and

a controller for determining the communication method according to the detected moving speed and for controlling the transmitter-receiver based on the determined communication method.

27. The stationary terminal for use in the communication system defined in claim 25, the stationary terminal comprising:

transmitter-receiver means for performing communication with the mobile terminal;

means for detecting the moving speed of the mobile terminal; and

means for determining the communication method according to the detected moving speed and for controlling the transmitter-receiver means based on the determined communication method.